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LUMINARY Memo #128

To: Distribution  
From: B. McCoy  
Date: 3 December 1969  
Subject: Level 6 Test Plan for Luminary 1C

Attached is a Level 6 Test Plan. It is a preliminary plan to be run on Apollo 12 KSTART tape and Apollo Site 7 terrain. We are open for suggestions to test Luminary 1C's performance concerning any particulars Apollo 13 may offer.

As soon as the Data Pack and Site Terrain for Apollo 13 arrive, they will be used to complete the analysis for the FSRR. Prior to the launch of Apollo 13, MIT will rerun these tests on the released Apollo 13 KSTART tape with modifications made for the particular phase of the flight, e. g. reload Landing Site Refsmmat.

Level 6 Test Plan  
(1~~s~~ IMU, Radar, State Vector Errors)

I. Rendezvous (1)

nominal LM active w/P52 alignment

II. Aborts from Descent (3)

- a. Abort at 30k ft - INSERTION to CSI solution w/P20 navigation
- b. Abort at 7K ft - INSERTION to CSI solution w/P20 navigation
- c. Abort after touchdown - INSERTION to CSI solution w/P20 navigation

III. Lunar Surface Operation & Ascent

offset RLS to show effect of gravity vector updates to RLS;  
power down IMU; P22 navigation, P12 ( $20^0$  yaw), P20  
navigation & CSI solution (no CSM plane change)

IV. Landings

- a. Automatic landing - V59 just prior to Higate
- b. P66 landings with following redesignations
  - run 1. N69: 10k ft/5k ft; ACA: none
  - run 2. N69: 20k ft/20k ft; ACA:  $2 + AZ/2 - EL$
  - run 3. N69: none; ACA:  $2 - AZ/2 + EL$